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ABSTRACT

The Office for Scientific and Technical Information (OSTI) responded to the need for additional data about the sorts of information social scientists want and use, and to assess the value of a personalized information service to social scientists in an academic environment by supporting an experimental information officer in the social sciences for a period of two years. This report describes the results in detail, and includes the following chapters: (1) Introduction, (2) The Information Service at Bath University, (3) Operation of the Current Awareness Service to Bristol, (4) The Operation of the Information Services, (5) Brief Review of Selective Dissemination of Information and Current Awareness Services, (6) Social Scientists' Information Habits and the Effect of the Information Service and (7) Future Work. (MF)

Bath University of Technology

University Library

EXPERIMENTAL INFORMATION OFFICER IN THE SOCIAL SCIENCES

Report on Work
Carried out in 1969

February 1970

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1. INTRODUCTION

1.1 Terms of reference and general review of the year

In July 1968 a grant was awarded to Bath University of Technology by the Office for Scientific and Technical Information to support an Experimental Information Officer in the Social Sciences for a period of two years.

This application to OSTI sprang in the first place from the need for additional data on information needs, to supplement the interview and questionnaire surveys carried out by the OSTI-supported Investigation into the Information Requirements of the Social Sciences (INFROSS) which had begun in September 1967 and was due to finish in September 1970. It became clear that no one method of investigating information needs, particularly unarticulated needs, would by itself be adequate. The questionnaire survey would it was hoped enable a general if superficial picture to be drawn, covering a large number of social scientists (over 1000 questionnaires were returned), and the interviews covering about 100 individuals would supplement this picture, by checking some of the questionnaire material and providing additional information which a mail questionnaire was not suited to obtain. Both of these methods studied persons only at a certain point in time and could not provide information in any depth. For this reason it was thought that work with, and observation of, a relatively small number of individual social scientists would provide data on information needs of a different kind, and possibly of greater validity. These three methods, all imperfect, would in some cases point in the same direction for some aspects of need, thus enabling conclusions to be drawn with some confidence; for other aspects, where different results were obtained, useful correctives could be applied, or the need for further study indicated. Finally, each method could contribute some data unobtainable by the other methods. In this way it was hoped that a reasonably comprehensive picture of information needs could be drawn up.

It was agreed that the attempt to assess needs merely by observation created difficulties in that the observer who had no other function would inevitably be in the way, and possibly be resented - certainly the co-operation of users in providing feedback would be endangered. This was the experience of Alan Macgregor during his one-year research project at the LSE (1967-68). Any kind of observation presented problems, but since the presence of an observer could not help having some effect on the person observed, it seemed best to accept this and actually offer them a definite service.

Once this was decided as the most satisfactory mode of operation it made it possible for the research project to achieve another aim. The idea of information officers in academic libraries has only recently received much attention, and those libraries which have already taken a step in this direction, e.g. Southampton University, and The City University, were offering generalised services to a large body of users.

The specialised information officer had existed, if at all, only as an accident or a by-product of another study. The establishment of an experimental information post in the social sciences would give an opportunity to assess the value and acceptability of such a development in a university library.

The combination of observation with service would also, it was hoped, enable data to be gathered on the effect of service on use; e.g. how far information habits and needs could be, or were, modified by different circumstances. This sort of data could be important in the design of information systems.

The future development of Bath University Library was envisaged as being in the direction of information services, and other members of the library staff were beginning to offer services in other subjects covered by the University. Comparative data from other, scientific subjects might therefore be obtainable within the same general setting.

Mrs Dawn Cunningham, BSc(Soc), formerly with the Labour Party Research Department, was appointed to the post of Experimental Information Officer and took up the post in January 1969.

Some explanation of the physical circumstances at Bath University is necessary. Following the granting of university status to Bristol College of Science & Technology in 1966, a phased move to the new site at Bath was planned. When Mrs Cunningham started work in January 1969, the School of Humanities & Social Sciences was already established on the new site at Claverton Down, but the School of Education was temporarily housed in Northgate House, one and a half miles away in the centre of Bath, and the School of Management was still in a house (Rockwell) on the far side of Bristol, nearly twenty miles away. The University Library building was not started until July 1969 and meanwhile the library was scattered in a number of branches; the Library Administration, and Education books, were in Northgate House, Management books at Rockwell, and Social Science books, in a branch containing also Biological Sciences and Modern Languages, at Claverton Down in a building about five minutes walk away from the School of Humanities & Social Sciences.

This physical separation of the departments and the library posed two problems: that of access to social science material, and that of contact with staff not based at Claverton Down. The problem of access to material was solved largely by the method of searching described later, that of contact with staff remained a problem throughout.

In the event the first term was largely taken up with simply informing staff members of the presence of an information officer, with interviewing staff in all three Schools, and with generally becoming familiar with library facilities and layout. A tentative information service was attempted in the first term, but the method adopted was radically altered in the summer term for reasons explained later. By the end of the spring term the Information Officer was firmly established in an office in the Social Science department and maintained daily contact with members of the department. During the Easter academic vacation the Information Officer (hereafter the I.O.) attended a week's course at the National Lending Library at Boston Spa, Yorkshire, on sources of information in the social sciences. This course, involving

literature searching methods (details of which have been reported elsewhere), was especially useful in view of the heavy use that it was necessary to make of abstracting and indexing sources in Bath University Library, which, due to its newness, lacked many of the primary sources of literature in the social sciences.

During the summer term, a Current Awareness Service to all these Schools (Management, Education and Social Sciences) was initiated and a searching routine set up. The CAS continued during the vacation, but since little time was spent in contact with members of staff, a number of bibliographies were compiled and literature searches were also carried out.

In August 1969 initial contact was made with social scientists at Bristol University, who were to be included in the Current Awareness part of the service, so that the 'long distance' service might be compared with a face-to-face service. A number of visits were also made to Bristol University Library, to gain knowledge of social science material and sources available there, and the Current Awareness Service to Bristol commenced at the beginning of October.

The autumn term was largely occupied with getting the Bristol CAS off the ground, and making modifications to the Bath CAS which was continued throughout the term.

1.2.1 Visits made by the I.O. during 1969

January:	Southampton University Library to see Alan Bell, Scientific Information Officer (the first with this title in any British university), and Miss Diana Marshallsay, Parliamentary Papers Librarian (though her functions go far beyond this title and she is in effect giving a partial information service to social scientists at Southampton).
April:	Durham University to see Mrs Jean Hopkins, who had since April 1967 been conducting a CAS for social scientists at Durham as part of the OSTI-supported Project for the Evaluation of Benefits from University Libraries (PEBUL).[1]
June:	UKAEA Culham Laboratory, to see A. G. Cheney and discuss with him the operation of the computerised information service in plasma physics.[2]

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[1] Durham University. Project for evaluating the benefits from university libraries. Final Report. Oct. 1969. Chapter 7, 'A current awareness service for social scientists', by R. Morley & Mrs J. Hopkins.

[2] Anthony, L.J., Cheney, A.G. & Whelan, E.K. 'Some experiments in the selective dissemination of information in the field of plasma physics'. Information Storage & Retrieval, 4(2) June 1968, 189-200.

1.2.2 Conferences and meetings attended during 1969

April 14-18: National Lending Library course on Sources of Information in the Social Sciences.

April 25: Northern Branch Meeting of the Institute of Information Scientists on the work of Information Officers in University Libraries.

Nov.22 & 23: Conference on Industrial Relations organised by the Social Science Department for placement students at Bath University. (The I.O. helped to organise speakers for this conference).

Nov.26: Meeting of the West Region Branch of the British Sociological Association on Sociology of Medicine and Social Policy. (Attended by several members of Bath University staff).

During the year, regular meetings were held with Maurice Line and the two INFROSS researchers, Mike Brittain and Frank Cranmer, in order to discuss the relationships between the two projects; and the I.O. followed the progress of the INFROSS project, reading papers written by the group, as well as making use of the literature gathered in the course of the INFROSS investigation.

2. THE INFORMATION SERVICE AT BATH UNIVERSITY

2.1 The clientele

The staff to be covered by the Information Service were already, as described, divided into three Schools - Education, Management and Social Sciences (the latter is in fact known as the School of Humanities and Social Sciences, but the I.O. did not offer a service to the few non-social science staff). The School of Social Sciences was further subdivided into an 'Economics' group and a 'Sociology' group. For convenience, therefore, the I.O. considered the staff as belonging to four groups - Education, Management, Sociology, and Economics, although in fact the first three of these groups contained staff from mixed disciplines, including non-social scientists (in the Education group). Contact was made originally with 38 members of staff in the four groups, but eight of those contacted were not, for various reasons, included in the information service. In some cases they considered the service inappropriate for the work they were doing, others were nearing the end of their research and felt that they had their information problems well under control, and one member of staff did not respond to attempts to interview him, and since he was burdened with administrative work further efforts were not made.

The breakdown of clientele who in various ways were covered by the service was as follows:

Sociology	10:	1 Professor 7 Lecturers 1 Research Assistant 1 MSc Student
Economics	6:	1 Professor 3 Lecturers 2 Research Fellows
Management	8:	7 Lecturers 1 MSc Student
Education	6:	1 Professor 5 Lecturers
Total:	30	

(Most of these who were not eventually covered by the service were in the School of Management).

Most of the staff were engaged in research - defined in the general sense of academic work other than teaching in the University, rather than in the narrow context of being involved in a specific research project. About three members of the Sociology staff, two in Economics, and two in Management, were not engaged in research work; all of them had

heavy teaching commitments and administrative duties. In the School of Education, two research projects involved in some way all of the staff; these were in Educational Technology and Curriculum Reform.

The School of Education at Bath is untypical of Education departments, since nearly all the staff are science graduates, and the course is deliberately science-oriented, but encompasses 'social science' defined in the widest sense. Members of staff therefore had interests in the teaching of their own scientific subjects which could not easily be catered for by the I.O.

The Economics group is the smallest of the four, and, being understaffed, carries a heavy teaching load. Apart from the Professor, who has a research assistant, lecturers find it difficult to get down to major research projects; thus only one substantial piece of research is being carried out on taxation. Basic teaching and service teaching to other departments of the University seem to occupy most of the group most of the time. Two members of staff are currently involved in writing books.

The School of Management perhaps contains a greater diversity of staff from different disciplines than any other. Most of the staff commute between Rockwell and Claverton since they are involved in teaching for the Economics and Administration degree as well as their own Management students. A variety of research is being undertaken and it is difficult to characterise any general interests in the School. Research projects during the year 1969 included a study of economic and social effects of the Severn Bridge; a study of the influence of Government policies on small firms' behaviour; and studies of wage payment systems in retail distribution.

In the field of sociology several research projects are in progress: these include a study of students in engineering sandwich courses, and of workers in chemical process plants. Other research interests concern mental hospitals, juvenile delinquency and probation, and industrial sociology. The School also offers an MSc in the Sociology of Science, which is a particular interest of the Professor of Sociology.

Generally it can be said of the four groups that staff are, with few exceptions, more concerned with teaching than with research, and in consequence much of the information service was aimed at keeping lecturers abreast of material that they would use in teaching. The kind of information requirements of clientele almost wholly engaged in research might in fact be quite different from those of staff at Bath University.

2.2 The services offered

Although it was intended that the I.O. should, amongst other things, run a 'current awareness service' through the selective dissemination of information to individual clients, she did not want to impose too formal a structure on the services offered, since this might be inimical to the provision of a service that attempted to identify and satisfy all information needs. Some members of staff obviously preferred to do their own scanning of periodicals but seldom 'got around to it', others were interested in information from newspapers or other non-academic

sources, and a few wanted help with bibliographies for new teaching courses. All these varied needs could not therefore be satisfied simply by individual references on cards, but had to be provided in addition to the card-notification SDI service. The service therefore varied for each client, but the main kinds of service offered were of three forms: (i) the current awareness service; (i) retrospective searching and bibliographical services; and (iii) circulation of various information sources. (The actual end product of these services will be described here, whilst the methods of searching and operational problems will be considered separately later in the report).

As already mentioned, the regular library staff at Bath University are already beginning to offer a partial information service, and some division of duties had to be agreed with Mr C. J. Knight, Assistant Librarian in charge of the branch library which housed social science books. A completely clear-cut division proved impossible and undesirable, but the general understanding was that the regular library staff should deal with routine queries concerning the use of the library, the classification and catalogue, etc., while the more advanced queries, especially those involving any searching of the literature, were the province of the I.O. Close cooperation was maintained throughout with Mr Knight and his staff, and on the whole this arrangement worked well. The physical separation of the branch from the School, and the fact that the I.O. is the only person making daily visits from one to the other, account for many of the requests dealt with by her which would otherwise be handled by the library staff (e.g. for photocopies, fetching and carrying inter-library loan requests, etc.).

(i) Current awareness service

This, the major service offered, consists of the provision of references in a standard form, on cards (see Appendix for example) which are sent out regularly to all those who requested this form of service (23 out of the 30 clients). The advantage of the card reference service is its amenability to record keeping and to the provision of 'feedback' on its own usefulness and accuracy.

(ii) Retrospective searching and bibliographical services

Whilst the CAS is by definition concerned with current literature, retrospective literature searches have been made where staff have requested a bibliography, either for research or for teaching purposes. Long searches are naturally more time-consuming (per person) than the ordinary current awareness service and the half dozen carried out were therefore generally restricted to the summer vacation. Short searches (i.e. a couple of hours), and searches for individual items of information as opposed to bibliographies are, whenever possible, carried out on demand, if time permits.

The following examples represent some of the subjects of bibliographies prepared during the year; the number of references produced varied from 10 to 100, and the bibliographies were required in most cases for teaching purposes.

Student protest
Econometric studies of household budgets
Parole and sentence remission policy
Finance of the social services
Economic planning
Social services in Holland.

(iii) Other services

Through personal contacts at the Board of Trade and Manchester Business School Libraries copies of current awareness bulletins produced by these libraries for internal circulation were made available to the I.O. The Board of Trade Contents of current journals included photocopied contents pages of economics journals taken by the Library, and Manchester Business School MBS Bulletin, similarly composed, covered management and some sociology and economics journals. The first is circulated to the four economics lecturers, two research fellows in economics and a lecturer in politics; the second to two management lecturers permanently situated at Claverton who do not have easy access to management journals at Rockwell, and to a sociologist whose interests are in management. This service only works because numbers are small and clientele are all situated at Claverton. Feedback on the usefulness of the service is indicated by a system of ticks, and inter-library loan requests are dealt with by the I.O. Of the ten individuals receiving the service, five had previously refused the card service, saying they would rather scan for themselves.

Press cuttings from The Times, Guardian, Financial Times, and occasionally the Sunday Times and Observer, are also sent to staff in the Schools of Management and Social Sciences. Only a minority (ten altogether) receive press cuttings, since the ephemeral nature of press information makes it useful to only a few social scientists. The I.O. also keeps press cutting files in her office, on about two dozen subjects under the general headings of 'Social Services' and 'Social Policy'; these may be borrowed by staff and are occasionally used to provide on-the-spot information in response to individual demands for information. One member of staff receives - at his own request - only press cuttings from the information service.

In addition various other information sources are kept in the I.O's office and are made available on request - e.g. guides to social science literature sources, monthly lists of HMSO publications, bulletins and journals on child care, poverty, race relations; Sociological Abstracts in the loose-leaf version which can be circulated); etc.

The I.O. also passes on any odd items of information that are passed over by Mr Knight, the social science Assistant Librarian, e.g. copies of lectures and papers, brochures etc. on various social science subjects. The accumulation of basic information sources in the I.O's office enables her, in a limited field, to provide factual information on the spot, and thus to satisfy 'short term' as well as 'long term' information needs.

As explained above, some of these services would normally be carried out by library staff, using the reference section of the library, and in some cases clients are referred to the library. It remains to be seen how many of the more routine requests are transferred to the library staff proper when the new Library is completed in 1970.

3. OPERATION OF THE CURRENT AWARENESS SERVICE TO BRISTOL

During August 1969, 62 social scientists at Bristol University were sent a letter inviting them to take part in the Current Awareness Service. Those invited consisted of: 26 economists, 5 social work and administration, 6 sociologists, 1 social psychologist, and 34 education. In the case of the first four departments, all members were circulated, while in the last case, a selection was made to give a reasonable balance; the social psychologist was the only member of the psychology department chosen. To avoid an overload and to provide a better comparison with the Bath clients, geography and politics staff were not circulated at all. A questionnaire designed to check their major and peripheral interests in teaching and research was enclosed (see Appendix).

Some 34 indicated that they would like to take part in the CAS; 6 refused because of administrative duties or plans to go abroad, and 22 failed to reply. Those who accepted were followed up by a further letter (in some cases, two letters) asking them to contact the I.O. by phone in order to clarify the answers to the questionnaire. The reason for this, as explained in the letter (see Appendix) was that the subjects listed by most clients were too broad to use as a basis for an effective interest profile and, frequently, details of research interests were lacking. A further 7 clients did not reply to the request for more information over the phone and so were not included in the service. Altogether 27 social scientists were finally followed up by phone, and during the phone conversation the following details were elicited:

A more specific definition of subjects required for the CAS.

Details of research interests - stage of research project, etc.

A list of journals to which the client had <u>personal</u> subscriptions, or which he did not wish scanned for the purpose of the CAS. These were all journals that clients made a point of scanning regularly and wished to continue scanning.

Queries concerning the service and the operation of feedback were also cleared up during the phone conversation, which solved the problem of definition of subjects for interest profiles. The questionnaire replies were so vague that future questionnaires would need to be very carefully worded to elicit anything like the extent of specificity that can be obtained from a telephone conversation. The vagueness of the replies was itself interesting and suggested that clients had simply no conception of the volume of material that would have resulted had every reference under their general headings been sent out. For example, some individuals stated simply 'Social administration', 'Sociology of education', or 'Race relations'.

All clients were finally contacted at the beginning of the autumn term and the first references were sent out on October 20th. References were subsequently sent out on a fortnightly basis.

At the time of writing this report, there had only been five fortnightly outputs, so it is difficult to judge at this stage how the Bristol service will progress; however, tentative conclusions on the output so far (nearly 200 references) indicate that the subject matter of the interest profile is the greatest determinant of information output, especially since there is no variation in the contact with clients. At the time of writing, three clients had received no references at all; two of these were concerned with very technical aspects of econometrics, and another with a narrow field in sociology. Should there continue to be no references on these subjects, the clients will be contacted again to see if the subjects can be broadened or redefined, and to check if possible on the kind of references that the I.O. has missed in this period, if any.

In some cases the I.O. has offered to photocopy whole contents pages of journals appearing in Current Contents where these journals were considered extremely relevant to the client's field. Apart from this service, reference cards only are sent across, each containing an indication as to whether articles and books are in Bristol University Library (which includes the Institute of Education Library). The I.O. receives a Bristol weekly accessions list and has compiled a list of Bristol's serials holdings in relevant subjects for this purpose.

Feedback has, on the whole, been prompt and accompanied by helpful comments. The provision of addressed envelopes is no doubt an incentive to full and speedy feedback. In general, the service to Bristol is less uneven and easier to run than the Bath service. It is more cut-and-dried, and less subject to day-to-day modification, and does not involve the provision of additional services on a casual basis - photocopies, inter-library loans, press cuttings, general enquiries, etc. However, Bristol clients with obscure, unusual and complex interest profiles probably suffer from the lack of contact that they might have received from an on-the-spot service.

Altogether, the setting up of the Bristol service has had a salutary effect on the running of the CAS as a whole, leading to a rationalisation of the interest profiles in an alphabetical index, which was necessitated since it was impossible to commit the Bristol interest profiles to memory, detached as they were from any personal knowledge of and contact with the clients.

The addition of the Bristol service also brought other innovations which were necessary to ensure that searching and recording references could be carried out as quickly as possible. Since names were initially as difficult to remember as interest profiles, each item in the profile index was accompanied by the initials of the client. Further lists were then constructed of initials, accompanied by the names of journals (a) from which the client did not want references, and (b) from which he particularly wanted references. This information, plus similar information for the Bath clients, was combined into a file used during searching sessions. Details of this file are noted later (4.2), but it is worth repeating that this rationalisation of the searching service did not take place until the addition of the Bristol service rendered some kind of innovation necessary. Any future university information service could perhaps adopt these, or similar, methods from the beginning; but the informal nature of the present service, the problems of library location, and the novelty of the project made it impossible to operate a routine and rationalised system from the beginning.

4. THE OPERATION OF THE INFORMATION SERVICES

4.1 Interviews and contact with staff

As already mentioned, the first term was spent partly getting to know staff. Social Science and Education staff at Claverton and Bath were contacted informally, but Management staff, who were more difficult to trace, were sent a letter about the information service, asking for a brief interview. All members of staff who thought they would like some help from the information service (and some who subsequently said they wanted nothing) were interviewed in an informal way. The I.O. tried to elicit data about information needs and habits in such a way that real practice and real needs were discussed, rather than formal and embroidered answers to questions. Thus the interviews lacked a formal structure and the information elicited varied in kind and quantity from person to person. Questions were asked about sources, but there was no prompting about particular sources. Thus, if the staff member made no mention of Sociological Abstracts, the I.O. did not refer to it. It was expected that information not elicited at the interview might be gathered through informal operations, so no attempt was made to cover the voluminous information on sources and practices of social scientists that had already been asked in the INFROSS questionnaire.

Subsequent contact with staff was kept on as informal a basis as possible. The I.O. made sure that she was always around in the department, and had meals and coffee breaks with the staff; but members of staff were left to contact her. Various memoranda were sent round, e.g. checking requests for press cuttings, and explaining how the card index system was to operate; and, in July, after the system had been in operation for a term, all members of staff were sent a note which indicated their interest profiles and asked if any new subjects should be added to it.

With staff at Claverton who were not receiving references, the I.O. frequently asked if there were any information needs that could be satisfied, and other sources were sometimes used. These kinds of contact were essentially informal, however, and varied according to propinquity and frequency of face-to-face contact. The implications of differences arising from variations in contact are discussed later.

4.2 Interest profiles

The construction of interest profiles for staff has proved to be a continually changing, rather than a once-only, job. This is partly because clients' interests and needs change - a particular research project or lecture series comes to an end; new ones are developed. Because of their very nature, social science subjects cannot be taught in isolation from social, economic and political events, and thus subjects become fashionable for a period, are discussed, and then perhaps fade into the background of the curriculum. For example, the I.O. found

'short term' interests expressed in the following subjects during the year: skinheads, conditions in mental hospitals, student protest, House of Lords reform, Nigeria/Biafra, etc. (This changing of interests may represent a major difference from both science and humanities teaching, and hence from their information needs).

No one could predict these changes of interest at the original interview, and often mention of a new subject has come up only in casual conversation in the common room. Thus interest profiles for clients with whom most contact has been made have been revised more frequently. Not all the new interests mentioned casually are ephemeral, however; the I.O. found, like Jean Hopkins at Durham, that on two occasions mention of a staff member's decision to read for a higher degree, or to embark on a new project came out quite casually during coffee-time conversations.

Originally, interest profiles were noted down in lists, under broad headings (e.g. Management, Economics, Education, Sociology) and consulted during searches. Later, when the I.O. had become familiar with the subjects, the lists were not used, and subjects were recalled by memory. At the end of the summer term, staff members in Sociology, Economics and Education were each sent a list of the subjects they had mentioned in their original interview, with a request that the list should be returned with any modifications and additions. (Management staff were not included in this updating of interest profiles, since most of them had not been contacted until the summer term). Few modifications were in fact made to the original list as a result of this request, and considering the year as a whole the I.O. is of the opinion that continuous personal and informal contact is the best method of ensuring that interest profiles are both kept up to date, and correctly interpreted.

In the autumn term the Current Awareness Service to Bristol was initiated, and the I.O. had to include about fifty more subjects from interest profiles in the daily search routine. Since it was not possible to commit to memory a host of new subjects for clients who were not known personally, the I.O. constructed alphabetical indexes of subjects from the interest profiles of Bristol clients, under the four general headings of Economics, Sociology, Psychology and Education.

A further list of clients' names and the journals they subscribed to was made for reference during searching sessions. At the same time, each client's interest profile and details of journal readership and other relevant information were noted on an index card, for easy access if a check had to be made, or any additional subjects added to the interest profile.

In order to ensure that the service to Bristol did not endanger the existing service to Bath, the I.O. also formalised the Bath interest profiles along the same lines. Index cards for each client were made out, and also indexes of the subjects, again under the original four main headings. At the end of the autumn term, Management staff at Rockwell were contacted in order to update their interest profiles.

A number of difficulties were experienced in constructing interest profiles at Bath. Very generally, the problems were of three kinds: either the client felt that he alone could pick out references of

relevance and was loath to leave searching to an I.O. (in cases like this the I.O. would leave the client to search in his own major field, e.g. sociological theory, and would concentrate her searching on peripheral subjects of interest to him); or the subjects proved to be too broad, i.e. were turning up far too many references; or the subjects were too narrow or obscure and turned up few, sometimes no, references.

The first two problems proved, in many ways, easier to deal with than the last one. In a number of cases where clients felt their subjects were broad and their particular interests difficult to define, the I.O. simply did not attempt to operate the individual CAS, but instead circulated the Board of Trade bulletin or the Manchester Business School bulletin, and provided a service of inter-library loans or internal photocopies from these. Internal photocopies were usually arranged for two Management staff who were cut off from their information sources at Rockwell since they were permanently stationed at Claverton. Where the subject profile was rather broad, the I.O. had to use discretion in the selection of references to avoid 'swamping' the client, e.g. an article which might seem relevant from its title, but had appeared in an obscure American education journal covered by Current Contents was often omitted. Similarly, the I.O. might decide to exclude an article on a topic of interest to the client if the article was obviously journalistic and ephemeral and of little academic value (e.g. an article on student protest might well fall into this category). Thus selective judgments were frequently based on the status of the journal and the content of the article. It is possible that such selectivity might have been too rigorous and occasionally omitted items of value; on the other hand, the I.O. could obviously take into account personal and local factors that could not be programmed into a computer search, e.g. 'this article is obviously only of local interest', or 'this person would probably not consider it worthwhile to take out an inter-library loan for this article since he is much too busy to cope with it at the moment.

Where a client's interests are obscure, or so extremely specialised that there is unlikely to be a steady flow of references, the CAS is undoubtedly inappropriate. Few references come up, and the client will tend to feel that the service is of little use to him. However, it is not always possible to identify immediately the subjects that are likely to be of this nature, and it is only after a period of several months that it becomes apparent that certain clients are going to get very little out of a CAS. The extent to which other services might be offered to them thereafter varies according to their accessibility to the I.O. and their own estimate of their needs. By the end of the year, a few clients included in the CAS were receiving very few references, and efforts are in progress either to redesign their interest profile again or to provide a different type of service.

4.3 Searching methods

The first problem to be overcome in providing the CAS was the physical separation of the three libraries holding Education, Management, and other social science journals. After an initial period of searching through journals in situ at Northgate House and Claverton (Management was not included during this first term), it was decided in the summer term to search journals before they were distributed to the sites and

shelves. This approach was possible since all post is delivered to the Claverton Social Science library site, classified and sent on to the other sites the same day. By establishing a routine of going to the library early every morning while the post was being unpacked, the I.O. was able to scan every journal on its arrival; and thus time was not wasted travelling from one site to another, nor in keeping elaborate records of which journals had been scanned. On the occasional days when the I.O. could not visit the library, staff made a list of the three or four social science journals that had arrived that day and these were followed up later, or checked in bulletins - e.g. the BOT bulletin or the MBS bulletin mentioned earlier. (After a fortnight's summer holiday, the shelves were scanned methodically to catch up on a fortnight's arrivals).

The sources used for tracing journal article references are of three kinds - original journals, both professional and general, and indexing and abstracting journals. Bath University of Technology, though comparatively poor in its coverage of basic journals, is well endowed with abstracting and indexing sources. Not all abstracting and indexing journals, however, are suitable for current awareness, either because of the time lag in their compilation, e.g. Sociological Abstracts, or because their indexing method makes them more useful as a retrieval tool for retrospective searches. For example, the I.O. used British Humanities Index, Social Sciences & Humanities Index and Bulletin of the Public Affairs Information Service frequently as a retrieval tool for quick literature searches on current subjects, but did not go through them whilst making the daily search for the CAS. Some journals however can only be used for current awareness, e.g. Current Contents (in Behavioral and Social Sciences, and in Education), and it is the opinion of the I.O. and Mr Knight that very little use is made of this particular journal by social science staff; for the I.O. however it is invaluable as a source of US and other foreign literature. On the other hand, some indexing and abstracting journals, e.g. Journal of Economic Abstracts and Education Index can be used both for current awareness and for retrospective searches. The use of these journals, plus the use of the BOT and MBS bulletins, has of course meant that the I.O. tends to see both the original journal and its contents page and contents several times. This might, on the face of it, appear time-consuming, but frequently articles are picked up later that were not apparent on first view, sometimes because items have been overlooked, sometimes because someone's interest profile has changed. This double and treble exposure, though irritating, is probably worthwhile.

Sources used for selecting books are book reviews in the weeklies, BNB, publishers' notices (these are passed on by the Library) and accessions lists from Bristol University Library and the University of Aston Library. BNB is not a useful source for major books, which are usually reviewed long before they appear in BNB, but for less important books, accounts of conferences and publications by various institutes and pressure groups it is useful. Bath University Library produces from time to time lists of accessions in various subjects, and those in the

social sciences are circulated by the I.O. to every member of the School of Social Sciences.

Other sources of information used by the I.O. include newspapers, lists of HMSO publications, and bulletins from various organisations to which the I.O. subscribes, e.g. British Sociological Association, Child Poverty Action Group.

During the scanning of journals etc. the I.O. now uses a file containing the following information:

An index of interest profiles grouped by subject and accompanied by the initials of the client concerned.

Lists of clients with details of journals from which they do not want references, and also journals that they have mentioned as useful, but do not see personally.

Lists of all the social science journals taken in Bath University and their location, arranged by subject and alphabetically.

Lists of all the journals taken by Bristol University (including the Institute of Education), integrated with the Bath lists.

A list of the journals covered by the BoT bulletin (those receiving this do not receive separately references from journals that it covers).

With the use of these lists, the I.O. is able to make out references for clients which indicate whether or not the reference is available in their library, and to avoid writing out references for journals which they already see.

The time spent searching in the library varies according to the amount of information arriving daily, and to the demand being made for short literature searches, photocopying, etc., but during term time the I.O. normally spends between one and two hours in the library each morning. Since weekly bulletins and other information sources arrive at the office, a good deal of time is spent in searching bulletins in the office and in press cutting, going through publishers' lists, HMSO lists, etc. Thus searching for information in one form or another probably takes up at least half of the I.O.'s time, but varies from day to day according to the quantity of arrivals at the library and in the office.

4.4 Circulation and feedback of the Current Awareness Services

During the year four kinds of current awareness information have been circulated: reference cards, weekly and fortnightly contents pages, bulletins, and press cuttings.

A copy of the reference card format is contained in the Appendix. In the first term a pilot scheme was attempted in which references were sent out on 5" x 8" edge-notched cards, each with a serial number, and feedback was kept by clients on specially prepared feedback forms. This method however soon proved to be unsatisfactory since it involved both the I.O. and the clients in keeping complex records - in the one case of information sent out, in the other case of feedback. Some members of staff mislaid the forms or did not bother to return them. Following

the meeting with Jean Hopkins, the I.O. designed, with the INFROSS team, a card on which information and feedback could be combined. It was decided however not to inform the clients at this stage where the references had been found (e.g. in an abstracting journal), nor to encourage them to ask for an inter-library loan, but to indicate whether or not the reference was in the library so that they could ask for inter-library loans themselves if necessary; photocopies of articles are provided if a client especially requests them.

The feedback on the new reference card system was purposely kept as simple as possible on the principle that minimal effort should be required from the client. The I.O. also made it clear that clients could base their assessment of a reference's relevance simply on the title and accompanying remarks, since it was felt that little feedback would be forthcoming if clients were first expected to trace and read the reference. The possible inadequacy of titles as a guide to relevance is recognised and plans to follow up the references in order to elicit more reliable feedback are being made.

For the first term information was sent out weekly on the reference cards. An attempt was made by the I.O. to provide certain staff members with information continually rather than once a week. This was abandoned after a short time since it was difficult to organise and the clients were not in any case following up the information, or in some cases even looking at it when it arrived.

In the autumn term, with the addition of thirty more clients from Bristol, the circulation of references to Bath and Bristol was put on a fortnightly basis; this was because circulation of reference cards takes up a considerable amount of time and no more than one day a week could be given to it (e.g. all carbons have to be filed, all references put into envelopes and addressed, and records made of which clients receive information on each delivery). The change from weekly to fortnightly output appeared to make no difference to the recipients, and so the system was continued on this basis.

Finally, in order to tailor to individual needs, two clients who use edge-notched cards in their filing systems continued to receive their references on these cards with the feedback section added to them.

The circulation of the two 'current contents' bulletins (BoT and MBS) is, as has already been described, an attempt to help clients who for various reasons do not get full benefit from the present card reference service. Of the ten members of staff who receive the bulletins at present (7 in Economics, 2 in Management, and 1 in Sociology), four do not regularly receive the card index service.

The two bulletins are circulated monthly (though delays do occur, especially during vacations) and staff members indicate items of particular interest to them. The I.O. indicates whether or not each journal is in the library and, if requested, obtains an inter-library loan of items not available at Bath; in the case of the Management staff, photocopies are also sent over from Rockwell to Claverton. Staff have been warned not to request inter-library loans unless the item is considered essential. In the first two weeks of circulation, the I.O. hoped that staff would indicate whether items were marginal, useful,

or essential, as in the card references, by a series of ticks with their initials attached. This appeared to lead to general confusion and a number of staff members said that they felt that the graduations of meaning were blurred. It was therefore agreed that items considered worth reading would be ticked, since it appeared that staff had really little intention of noting down and looking up 'marginal' items. Feedback records from the circulation of these journals are kept separately by the I.O. Most of the staff have indicated that they find the circulation of these bulletins useful and the number of inter-library loan demands arising from the bulletins has undoubtedly risen. The I.O. is trying to establish the extent to which staff members have found the inter-library loans valuable.

The press cuttings service is confined to the School of Social Sciences and the School of Management, and after a pilot attempt the I.O. came to the conclusion that the keeping of records and feedback on press cuttings was not justified. Staff could not be expected to return an appraisal on every press cutting they received, and the keeping of records would prove extremely time-consuming. Instead, feedback on press cuttings is informal; staff have usually made some comment on the general relevance of the cuttings provided and the service has been altered, or in some cases discontinued, on the basis of these remarks.

Ten members of staff receive press cuttings on this basis. In addition, two members of staff who share a room with the I.O. also make their own cuttings from the I.O's Financial Times. Press cuttings are certainly ephemeral, but are nevertheless useful, especially to the economists, management staff, and the social administration-oriented sociologists. In addition to the use made of cuttings by staff, the need to peruse papers carefully ensures that the I.O. picks up details of government and other reports, enquiries, etc. that might otherwise perhaps have slipped her eye.

The experience of operating several different Current Awareness Services during two full terms has served to indicate the importance of tailoring services to individual needs. Thus, staff who for various reasons could not be included in the reference card system have benefited instead from the circulation of bulletins; some members rely more heavily on items of information from the press, and from the less 'learned' journals. The provision of different kinds of service, although presenting more purely administrative and often time-consuming problems and leading to a certain unevenness of service, probably fits in with clients' needs more successfully than running a more formal, cards-only service. It is probable that social scientists are more likely than scientists to have very different kinds of needs to be satisfied by different information media. Reference cards however have the advantage of a built-in feedback system that provides some method of evaluating the service; and an attempt at an early assessment of the usefulness of reference cards is made in the next section.

4.5 Analysis of feedback from May till November 1969

It was felt that a preliminary analysis of the feedback obtained on the first 500 cards, i.e. serial numbers 1-500, might be usefully incorporated into this report. At this point in time, i.e. the first week in November, fifteen separate 'deliveries' of references had been

made (during the summer vacation references had been delivered fortnightly, with a gap of a month between mid-September and mid-October). The following preliminary analysis, although by no means thorough, does serve to emphasize some of the problems faced by the service in the first year and the unevenness of service both between groups and between individual within groups. Two additional sections of the analysis also look briefly at (1) the pilot system of card references (referred to as the Mark I system), which operated for a few weeks before being withdrawn in May for the new carbon-copy cards, and (2) the circulation of a current awareness bulletin to four clients in the Economics group. over the same period.

4.5.1 References and feedback

Of the first 500 references, some 493 were actually sent out (2 were spoilt and 5 were waiting to be passed to an MSc student who had left the University). 442 of the 493 references had counterfoils returned for them. Of the 51 missing counterfoils, 18 were not returned by a sociologist who abandoned plans to write a book on a certain topic and decided that, as a result, the references were not worth pursuing. (This client in the event received no card references at all and instead was later circulated with one of the bulletins). Apart from this special case the remaining 33 outstanding references for which there was no feedback were fairly evenly distributed amongst clients and were probably mislaid by them. The overall success rate for the return of counterfoils (excluding the 18 not returned for reasons mentioned above) was therefore 93 per cent.

4.5.2 Distribution of references (Mark II)

Altogether card references were sent to 25 clients (10 sociology, 6 management, 3 economics and 5 education). The pattern of distribution for these 493 references ranges from a maximum of 43 to a minimum of 1 reference. The exact distribution is indicated by Table 1 which illustrates the unevenness of the current awareness service. It further underlines the points that have been made concerning the extent to which the interest profile, rather than personal factors, determines the number of references that come up. Two of the management staff with whom no contact has been possible come out top of the distribution, whilst three education staff with whom there has been a similar lack of contact come bottom.

Table 1

Distribution of references received, by subject of client

M	43	Ed	22	M	13
M	41	Ed	22	M	13
S	40	Ec	21	M	8
S	39	S	20	Ec	7
Ec	32	S	18	S	6
S	30	M	16	Ed	5
S	23	S	14	Ed	2
S	22	S	13	Ed	1

M = Management; S = Sociology; Ed = Education; Ec = Economics

4.5.3 Recipients of Mark I references and Current Awareness bulletins

The total effect of the first seven months of the service would be distorted if no account were taken of the other references circulated on edge-notched cards and via bulletins. Although it is not possible to analyse feedback as adequately on these two services the addition of these sources of information does alter the picture slightly.

Under the Mark I card system, which lasted for about five weeks, 120 cards were sent out to 13 clients. Of these, 83 were returned, a response rate of only 69 per cent (considerably lower than the Mark II system, which had the advantage of counterfoils rather than 'feedback forms'). None of the four economists returned any feedback forms at all. (Since the feedback forms had proved so cumbersome the I.O. did not press for their return).

4.5.4 References sent out, and feedback analysed by subject interest

The following Tables (2 and 3) give a breakdown of the number of references distributed and feedback received, by subject.

Table 2

Mark I references sent out and returned, by subject

Subject	No.of clients	References Sent N	Sent %	No. of refs. sent per client	Returned N	Returned %	Response %
Total	13	120	100	9.2	83	100	70
Economics	2	14	12	7.0	0	0	0
Education	4	22	18	5.5	18	22	82
Sociology	7	84	70	12.0	65	78	77

Table 3

Mark II references sent out and returned, by subject

Subject	No.of clients	References Sent N	Sent %	No. of refs. sent per client	Returned N	Returned %	Response %
Total	24	493	100	20.5	442	100	90
Economics	3	60	12	20.0	60	14	100
Education	5	74	15	14.8	74	17	100
Management	6	134	27	22.3	112	25	84
Sociology	10	225	46	22.5	196	44	87

Tables 2 and 3 show Sociology and Management to have been the main recipients of references (Management staff were not included in the Mark I system); the number of references per client in the Mark II system did not differ much between groups, except for Education. Although the economists received fewer card references, they did benefit during this period from the circulation of the Board of Trade Library's Contents of current journals which covers about 150 journals, of which some 60 are not taken by Bath University Library. Table 4 indicates the number of useful references obtained from the circulation of 26 weekly issues of the bulletin.

Table 4

Circulation of Board of Trade 'Contents of current journals'

	N	%
Total useful references	244	100
In Bath University Library	181	74
Not in Bath University Library	63	26

The bulletins were circulated originally to four members of the Economics group (circulation has now been extended to another three in the group), and staff were left to note down references they had indicated as useful. A high proportion of 'useful' references in journals not taken by the Library were obtained by the I.O. on inter-library loan, representing 26 per cent of all items marked as useful.

4.5.5 Nature of the information contained in references

The references sent were to articles in journals, new and forthcoming books and 'reports' (in this category are included HMSO publications, research monographs, and reports put out by various groups and institutions, e.g. Child Poverty Action Group). Table 5 shows the breakdown of references into these three categories, and also the number of references to items not held by the Library at the time of citation.

Table 5

References sent, by physical form

	All groups		Econ. (N=60)	Educ. (N=74)	Man. (N=112)	Soc. (N=196)
	N	%	%	%	%	%
Total	442	100	100	100	100	100
Books	78	18	33	3	17	18
Journal articles	324	73	60	90	69	76
'Reports'	40	9	7	7	14	6
In Bath U.L.	293	63	45	80	67	60
Not in Bath U.L.	149	37	55	20	33	40

Table 5 shows that about three quarters of all references are to articles in journals (this includes weeklies as well as professional journals). Books make up the next largest item and 'reports' represent only 9 per cent of the total. The variations between the different subject groups are easily explained. Economics clients received a higher percentage of book references since many journal references were covered by the circulation of the Board of Trade's Contents of current journals. Since new books are less likely to be held by the library than journals, this predominance of books also accounts for the fact that 55 per cent of economics items were not held by the library. By contrast the School of Education received more citations to journal articles (the journal literature in this field is very extensive) and only 20 per cent of items cited were not available in the library. Management alone of the Schools received a substantial amount (14 per cent) of 'report' literature - this again is not surprising in view of the practical nature of the subject. About a third (34 per cent) of all references were to articles, books and reports not at that time in the library. It is probable however that these figures overestimate the number of relevant or potentially relevant references held by the library, for several reasons:

(i) many references selected by the I.O. were from journals entering the library;

(ii) the I.O. tended to be selective with 'broad' subjects, and selection was biased towards items in the library stock;

(iii) references are obviously to recent literature, and holdings of current social science journals in Bath University Library are not inadequate.

4.5.6 Relevance of references

Table 6 indicates the relevance of Mark II references received, as assessed on a three-point scale: Essential/Useful/Marginal. This assessment was based on an immediate viewing of the reference, not of the item to which the reference referred; except in cases where the reference had already been seen or read. Since total uselessness would be hard to assess without inspecting the item, no separate category was provided for this; as pointed out below, some 'Marginal' items would undoubtedly be found to be useless on inspection. Clients were asked, in addition, to indicate whether the reference had already been seen.

Table 6

Relevance of Mark II References

	All Groups		Econ.		Educ.		Man.		Soc.	
	N	%	N	%	N	%	N	%	N	%
Total	442	100	60	100	74	100	112	100	196	100
Essential	116	27	8	13	17	23	30	27	60	31
Useful	217	49	30	50	51	69	50	44	88	45
Marginal	99	22	22	37	6	8	22	20	48	24
No answer	10	2	0	0	0	0	10	9	0	0
Seen before	74	17	16	27	10	16	16	16	32	16

Table 6 shows that three quarters (75 per cent) of the references sent out were considered useful (49 per cent) or essential (27 per cent). This is an encouraging rate of relevance. Of the 22 per cent of marginal references some, on inspection, may turn out to be useful, but it is quite possible that most will not be pursued; it should therefore be borne in mind that since there is no category for 'useless' references the term 'marginal' necessarily encompasses 'useless' references as well. Another feature in three-point scales is the tendency for the middle category to be overweighted, so that clients may have opted to describe a reference as 'useful' if they are not sure of its value. Only a follow-up study can ascertain for sure whether references described as 'essential', 'useful' or 'marginal' on sight would eventually be placed in this category after perusal; it is hoped to attempt such an analysis on at least a proportion of the references during 1970.

Feedback forms (examples are given in the Appendix) were sent out with the original Mark I references, and there was a response rate of 69 per cent. The Economics group did not return any forms, but the feedback for the Sociology and Education references is analysed in Table 7 below.

Table 7

Relevance of Mark I references

	Both Groups		Education (N=18)	Sociology (N=65)
	N	%	%	%
Total	83	100	100	100
Essential	32	39	44	37
Useful	44	53	56	52
Marginal	7	8	0	11
Seen before	13	16	28	13

Despite the low response rate these early results were reasonably encouraging, with all the Education references and 89 per cent of the Sociology references considered to be useful or essential.

4.5.7 Relevance of references analysed by nature of reference

In order to discover whether references to particular physical forms of information - books, journal articles and reports - varied greatly in their degree of relevance, the feedback was analysed by type of information (book, journal, 'report') and by subject group (Economics, Education, Management and Sociology). The full table is contained in Appendix B, whilst Table 8 presents a general analysis.

Table 8

Relevance of different physical forms of information

	Journals (N=324) %	Books (N=78) %	'Reports' (N=40) %
Essential (N = 116)	27	24	13
Useful (N = 217)	50	56	61
Marginal (N = 99)	23	20	26

The difference between journals and books is not large; both show about a quarter 'essential', a quarter 'marginal' and half 'useful'. Reports show some differences, in that there are rather more 'marginal' and considerably fewer 'essential'. This is largely due to the fact that 50 per cent of the 'report' literature in sociology was found to be marginal. The numbers involved here are so small that it would be unwise to draw any conclusions from these figures (e.g. Sociology only had 10 'report' references of which half were considered useful, half marginal, whilst Management, which had most 'report' literature (20 items) found 60 per cent of it either useful or essential).

The full figures given in the Appendix also point to little substantial variation between the three forms of references. In economics the low number of 'essential' journal references (11 per cent) and the high number of 'marginal' journal references (42 per cent) undoubtedly contribute to the lower essential/useful percentage of economics references overall. A very probable explanation for this deviation is that most of the mainstream economics journals were covered by the circulation of the Board of Trade Library's Contents of current journals. By contrast, in Education, which received a very high number (84 per cent) of journal references and is well served by education journals in the Library, 86 per cent of journal references were considered 'useful' or 'essential'.

The figures do not indicate, moreover, that items are judged useful or not according to their accessibility, since references to books and reports - almost none of which were available in the Library at the time of notification - are not judged to be substantially less useful than journal references.

4.5.8 Conclusion

An analysis of the first 500 references serves to illustrate the extent to which the usefulness of the SDI services varies from one client to another, a variation resulting almost entirely from differences in interest profiles. The service seems to be serving its purpose inasmuch as three quarters of the references received appear to

be either useful or essential to clients and less than a fifth had been seen before. Finally both the card references and the bulletin circulation draw attention to material not available in Bath University Library (at least a third of the references fall into this category) and thus stimulate an interest in periodicals and publications that clients would not normally come across.

This halfway analysis of the first 500 references has necessarily been limited to a discussion of very basic information on feedback, recipients and type of material, and has unavoidably been complicated by the need to analyse as far as possible the outcome of the brief pilot (Mark I) system. A future analysis might well go into more detail concerning the actual periodicals covered, the type of information distributed (whether methodological, statistical, conceptual, descriptive or historical) and the sources most frequently used by the Information Officer. These detailed analyses were not justified with a collection of only 500 references.

5. BRIEF REVIEW OF SELECTIVE DISSEMINATION OF INFORMATION AND CURRENT AWARENESS SERVICES

5.1 Selective dissemination of information in science

5.1.1 Progress in the USA

SDI services in the United States have grown apace since Luhn first drew attention to 'that service within an organization which concerns itself with channelizing new items of information from whatever source, to those points within an organization where the probability of usefulness in connection with current work is high.'[1] Although SDI services were originally pioneered as 'in-house' systems, exclusive to the organisation, many systems now use outside sources for part, or all, of their document input, and 'dissemination centres' have been set up for this purpose. By the mid-sixties, considerable interest was being shown in the spread of SDI systems and a number of surveys of systems in use were made. In 1966 Bivona & Goldblum[2] of the U.S. Army Natick Laboratories looked at 18 major systems with a view to designing their own, and constructed a matrix summary of SDI characteristics. Cooper[3] describes an American Institute of Physics survey of 17 U.S. SDI services run by professional, non-profit-making, commercial, educational, industrial, and government agencies. The survey also looks at costing problems and compares 'wholesale' and 'retail' approaches to information dissemination. A comprehensive review of the literature and the issues involved in SDI is presented by Connor[4] in an article which devotes a considerable amount of space to the evaluation methods used in current SDI services. Finally the most up-to-date and comprehensive survey of SDI services (of which three are UK services) is presented by Hoshovsky in the report of a survey undertaken in 1967.[5]

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[1] Luhn, H.P. 'A business intelligence system.' IBM Journal of Research & Development, 2(4) October 1958, 314-319.

[2] Bivona, W.A. & Goldblum, E.J. Selective dissemination of information: review of selected systems and a design for army technical libraries. Report prepared for U.S. Army Natick Laboratories by the Information Dynamics Corporation, Reading, Mass. 1966. (AD 636 916).

[3] Cooper, M. 'Current information dissemination, ideas and practices.' Journal of Chemical Documentation, 8(5) 1968, 207-218.

[4] Connor, Judith Holt. 'Selective dissemination of information: a review of the literature and the issues.' Library Quarterly, 37(4) October 1967, 373-391.

[5] Hoshovsky, A.G. Selective dissemination of information (SDI): analysis of experimental and operational SDI services 1967. Springfield, Va., U.S. Air Force Office of Aerospace Research, 1969. (AD 691 012).

This last survey collected data (through questionnaires, phone interviews and published literature) on 38 out of the 50 SDI systems known to be in operation in the U.S. in August 1967. Their general conclusion on the role of SDI was that, despite the increase in its popularity, it still 'tends to be a relatively low priority operation in a multipurpose computer installation...developed on an ad hoc basis and existing at the sufferance of higher priority budgetary and research requirements.' SDI has become very much a by-product of computer-based systems: 75 per cent of all SDI systems were found to use a computer at some stage, and 33 per cent used two or more computers in various processing stages of the SDI cycle. However, the use of the computer does not necessarily determine the speed or efficiency with which the system operates; of the seven non-computerised systems surveyed, one was the second fastest in output, whilst another turned out to be second slowest. The only social science subject covered by any of the SDI systems surveyed (and then by only one) was psychology, significantly considered the most rigorous of the social sciences. The advantage of science over social science within the context of computerised SDI operations is the rigour and exactitude of the language used. 80 per cent of the SDI systems studied used a controlled vocabulary, of which two thirds consisted of thesauri constructed by the organisation itself, and one third used outside thesauri developed by organisations such as the National Library of Medicine. Only four of the computerised systems and three of the manual systems used free text and these required long and complex user profiles to provide a useful service.

The longest and most complicated tasks of a computer-based system are selecting and preparing documents for input. One of the significant findings of the survey is that just under two thirds of the organisations used outside sources to handle part or all of their document input. This points to a growing use of large dissemination centres on a national level.

Profile construction methods vary; the survey suggests that auto-profiling (i.e. that done by the organisation) has not been very acceptable - only one system still used the method. NASA's SDI system, SCAN, uses standard profiles - there are 189 topics from which clients can choose. 80 per cent of the systems allowed for voluntary profile modification, but only one seemed to have any genuine feedback on relevance, by asking users to indicate how appropriate the announced document was. The survey indicates a growing preference for 'group profile' schemes as compared to individual profiles. Although at present only 25 per cent of the schemes used group profiles, when offered a choice between a more expensive individualised service or a cheaper group service, 70 per cent of the clients were found to be switching over to group profiles.

Profile matching strategies remain the same as those described in earlier surveys - namely linear, weighted or Boolean logic systems; individual profiles are matched against individual documents in 75 per cent of the cases. The survey provides no evidence as to which of the systems is most effective in terms of relevance.

Other general information about SDI found by the survey is that weekly alerting seems to be the most popular (9 cases). Other regular systems are daily (5), fortnightly (6), and monthly (5). Typical

notices are machine-printed, sometimes on punched cards, and contain an abstract of the items. Only three systems actually delivered the item itself.

The size of the systems varied enormously, ranging from a document input of from 25 to 30,000 a month, and from 12 to 2800 users. Costs are naturally difficult to isolate, SDI being usually a subsystem. Also, much of the cost is often absorbed by other parts of the organisation, especially technical labour costs; the survey suggested an average of $234 per user per year. The survey indicates that economies of scale can be made and that cost per head drops as the number of users increases.

Not all systems were operating at minimum cost, or indeed maximum capacity, since 27 per cent of those surveyed were experimental and 8 per cent still partially experimental. The experience of most SDI systems suggests that it takes two to three years for any one system to become fully operational.

5.1.2 SDI progress in the UK

Non-mechanised SDI systems have existed for many years in British industry, Government departments and research establishments, usually taking the form of circulating current awareness bulletins containing information of interest to particular departments and research teams. Industrial and Government libraries have usually ensured that journals and relevant literature are circulated to relevant personnel, and bulletins consisting of photocopied contents pages of journals are quite popular. Besides the internal information services a number of regionally based information services operate, often based on local public libraries or technical colleges (such as LADSIRLAC in Liverpool, SINTO in Sheffield, HERTIS in Hertfordshire, etc); these industrial information services have also used current awareness bulletins as a means of pooling local information. None of these services however could be considered as selective dissemination of information since they were not individualised in any way.

The earlier services which could properly be called SDI tended to use edge-notched or optical incidence cards, and later machine-sorted punched cards. Semi-mechanised methods are gradually giving way - but by no means everywhere - to computerised systems. There are numerous references in the literature to local current awareness and SDI services, at varying levels of sophistication and with varying subject coverage.

What is interesting is that few services of this kind have operated in universities in the UK. There are numerous reasons for this - the type of library staff recruited, the very wide range of subject needs to be served, the self-sufficiency of academics, and sheer tradition. University libraries have traditionally issued lists of additions, but these have been concerned solely with books (and new periodical titles). Only in recent years have there been any examples of bulletins listing periodical articles by subject - an example is the University of Aston's Higher education: a weekly news bulletin. Some libraries in higher education also use photocopied contents pages of journals for current awareness, e.g. the Manchester Business School's weekly bulletin which the I.O. circulates at Bath.

The use of computerised SDI services in the UK is very recent and has only been possible through the active financial support of OSTI and cooperation with the American computerised systems. Most services began as experiments and are only just beginning to be put on a commercial basis. One example is MEDLARS, which was designed for retrospective searching but is now being used experimentally for current awareness. Another experimental service, in chemistry, is also linked with published abstracting journals (Chemical Titles and Chemical Abstracts). With the help of the Chemical Society Research Unit in Information Dissemination & Retrieval at Nottingham University, it has supplied selected chemists in university departments, Government research departments and industrial enterprises with a current awareness service since January 1967.

Two other large-scale American systems available in the UK are ASCA (Automatic Subject Citation Alert), a service of the Institute of Scientific Information; and PANDEX, which covers journals, books, reports and patents in a number of sciences.

The only two major computerised services operating in England which do not use an American data base are INSPEC (Information Systems for Physics, Electrotechnology and Control) which is run by the UK Institution of Electrical Engineers; and the UKAEA's experimental Current Awareness Service in Plasma Physics. This service, based on UKAEA Culham Laboratory, originated as an internal manual alerting service, but has been successfully computerised and made available to outside customers.

The only large-scale non-computer system in the UK is that operated by the Scientific Documentation Centre at Dunfermline, which specialises particularly in physical and life sciences.

A further OSTI-financed experiment, based on Biological Abstracts, has just been set up at Nottingham University.

The provision of current awareness services in science, though patchy, is now extensive. All the services are continually being evaluated and answers have not yet been found to many of the problems of operation that are emerging. For instance, how can the complexity and the efficacy of the services be reconciled? If thesauri are too complicated for the average user to handle, services can only be run by trained information officers; nevertheless the potential for information retrieval increases with the exactitude of the thesauri and the grammar content of the data base. Sophisticated profile construction calls for staff who have considerable knowledge both of the terminology of the subject field and of information handling; large-scale services are often expensive and the question of who should pay has not yet been satisfactorily resolved.

In the meantime OSTI is supporting not only computerised SDI services, but also information officers in six universities, and specialised information centres providing services for the scientific community generally. Four of these new centres cover the fields of biodeterioration, intestinal absorption, mass spectrometry and high temperature processes. Two other centres cover ergonomics and rock mechanics. The work of these centres, of the information officers, and of the SDI services is intended to be continuously evaluated as it progresses.

5.2 SDI in the social sciences

SDI services - or indeed any current awareness services - in the field of social sciences are at present almost non-existent except for a few very experimental projects. The underdevelopment of social science information systems has perhaps two main causes; firstly the basic differences between science and social science as disciplines and secondly the difference in the institutional uses of social science as compared to science. To consider this latter cause first: it is clear that the use of 'social science' subjects in industry - e.g. 'management science', industrial sociology and psychology, is not yet at a sophisticated level compared with the part played by scientific research in science-based industries. The other major institutional use of science is government research in defence and aeronautics and space exploration. Both these institutional uses of science command enormous capital resources as compared to the funds available for social science research in universities. Despite this difference in institutional usage there is tremendous potential for the use of social science information systems in both industry and public administration, quite apart from academic uses; but these needs are only just beginning to be appreciated.

Some of the fundamental differences between science and social science were considered briefly by Line,[1] who considered a number of characteristics of social science which appeared to distinguish it from science:

(a) the subject matter is unstable and constantly changing;

(b) approaches to study of the subject vary enormously, e.g. behavioural, philosophical, etc.;

(c) methodological disputes are much commoner;

(d) each discipline in social science is less clearly defined and there is considerable overlap between disciplines;

(e) the scatter of potentially relevant information is much greater than in most sciences;

(f) the relevance of information is even harder to assess;

(g) the solid factual content of the social sciences is both quantitatively less than in the sciences, and less vitally important in research;

(h) conversely, abstract concepts and ideas play a larger part in research;

(i) because of (a), (g) and (h) identification of information required is much more difficult;

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[1] Line, M.B. 'The social scientist and his information needs,' in Library Association Reference, Special & Information Section. Proceedings of the 16th Annual Conference, 1968. London, The Section, 1968. p.10-18.

(j) 'discovery' in social science is a quite different phenomenon from discovery in the sciences, and the need to establish priority for a new advance by publication is much less;

(k) duplication of research is almost impossible, and replication often desirable;

(l) older knowledge is not superseded in the same way;

(m) the process of research may be quite different.

Thus the information scientist in the social sciences is faced with a number of problems:

(a) The identification of social scientists' needs is much more difficult, and the evaluation of any information service is equally more complex.

(b) The language of social science, because of its lack of rigour and variation in meaning according to each different discipline, is not so easily amenable to computer searching.

(c) The potential field of document input is enormous; a great deal of ephemeral information in weekly journals, newspapers, etc. is often of relevance; even within the general field of social sciences the law of scattering very probably operates to a much greater extent among social science professional literature.

(d) The overlapping of subjects, the provinciality of much research (i.e. not always relevant to another country) and the mass of media that could be potentially useful, all call for tremendous selectivity, which at present can be better achieved (and at much less cost) by a human agency than through a computer. Indeed the lack of machine-readable abstracting and indexing tools in the social sciences has held back computerised social science services on a large scale and it is difficult to conceive of such services operating in the immediate future.

The absence of SDI services in the social sciences may thus be summarised as due to:

(a) the relative scarcity of indexing and abstracting periodicals;

(b) the relatively small size of them, so that they have not had to automate to keep going (MEDLARS started because Index Medicus had to be computerised);

(c) there is less urgency or need to be up to date than in science;

(d) the bodies involved in information services in social science are generally much smaller and have less financial resources;

(e) social science is much less used in industry, where SDI services are most developed - and in universities they have not

developed in any subject, except as a spin-off from the large-scale scientific services which had developed anyway;

(f) social sciences are less amenable to searching on titles and keywords;

(g) the potential clientele and market is much smaller than in science.

Nevertheless an attempt to set up a computerised social science SDI service has been carried out by the Political Science Department of Northwestern University.[1] Northwestern decided on a very selective input of only 18 journals chosen to represent an interdisciplinary approach; some 495 articles from these journals were processed (with an abstract) and only four SDI runs were made. The experiment did not therefore operate a current awareness service, sending out weekly or monthly information, but simply retrieved information on four occasions - in April, May, July and August 1966. In a sense, the experiment has more in common with a computerised literature search than with current awareness. The average number of articles retrieved per subject ranged between 3.8 and 7.9 over all four runs. However Northwestern plans in future to run the SDI as a regular monthly service, covering 100 articles per month.

The profile-matching technique used by the SDI system is a program (TRIAL) devised originally for retrieving propositions abstracted from literature on political participation; this searches the text for combinations of related keywords, and further selectivity is ensured by the weighting of keywords. Because of the complexity of the program and the need to include abstracts to ensure relevant retrieval, the cost of preparing input in such a system is substantial as compared with the cost of each run.

The report on this SDI experiment at Northwestern University states that provision is being made to obtain feedback from the users on the relevance of information produced; but at that time the usefulness of the service (relative to the large administrative and computing costs) was still to be determined.

In England, the only computerised social science current awareness service so far has operated not within a university but within the House of Commons. This experiment,[2] financed by OSTI, provided information in the form of current awareness bulletins. Culham's computer (already providing the Plasma Physics SDI) handled the profile matching and output, whilst input (consisting of newspaper and journal items, HMSO publications, and details of Acts and Debates) was indexed by the House of Commons library which had built up a considerable expertise in the past

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[1] Janda, Kenneth & Rader, Gary. 'Selective dissemination of information: a progress report from Northwestern University. American Behavioral Scientist, 10(1) January 1967, 24-29.

[2] Poole, J.B. 'Information services for the Commons: a computer experiment.' Parliamentary Affairs, 32(2) Spring 1969, 161-169.

in handling this varied kind of material. Weekly bulletins under 36 broad general headings (e.g. 'social problems') were supplied to MPs and to other interested individuals for a period of two months. The service was, naturally enough, welcomed by MPs, but social scientists at Bath, including the Information Officer, found much of the information to be of an ephemeral nature in the sense that it was concerned with day-to-day issues as treated in the press and the weeklies. This kind of service is obviously of more interest to MPs, who need information for debating purposes and need to keep up to date on a broad range of subjects, than for academics who tend to be more concerned with long-term and specialised research. Academics in fields of social policy and administration and politics found the service of most interest. Nevertheless this kind of information service would undoubtedly be an enormous boon to many outside the House of Commons and plans are being made for the continuation of the service.

One or two non-computerised SDI experiments in social science have been carried out or are now under way: at Durham, the OSTI-sponsored PEBUL project in its last two years included an SDI service to social scientists, run by Mrs Jean Hopkins, a graduate economist.[1] Interest profiles were based on initial interviews and informal contacts; social science journals, weekly BNB, and HMSO publications were scanned and references containing author, title, periodical, issue and location were sent to individual users on 5" x 3" cards (a system adopted as being more popular than an individual weekly bulletin). Building up from an initial 11, a total of 29 clients were covered by the service: 10 economics, 4 economic history, 8 business school and 7 politics (compare Bath's 6 economics, 8 management, 10 sociology and 6 education). Apart from this major difference in the clientele served, there were some other differences. The PEBUL service probably concentrated rather more on local journals than the Bath service. The number of local individuals served was almost the same (29 as against 30), but Bath provided a postal service to Bristol University clients as well (it should be noted that Mrs Hopkins was part-time, four days a week). PEBUL's attempt to evaluate the service is considered in the next section (5.3).

Another manually operated information service based on individual notification of references is that carried out by the Information Section at The City University.[2] A dozen personal notification services are operated on the basis of subject profiles submitted by research workers or by members of the university interested in specific aspects of higher education. (Education and Management are the only social sciences at present included in this information service, which deals mainly with scientists). Feedback for this system is still purely informal. The Section also makes press-cuttings; these are not sent out, but filed and produced in response to general demands for information on subjects where they are appropriate.

A number of libraries produce current awareness bulletins in social science subjects either by xeroxing contents pages of journals in a

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[1] Durham University. Project for evaluating the benefits from university libraries. Final Report. October 1969. Chapter 7, 'A current awareness service for social scientists', by R. Morley and Mrs J. Hopkins.

[2] Corney, Elizabeth. 'The information service in practice: an experiment at The City University Library.' Journal of Librarianship, 1(4) October 1969, 225-235.

particular field and sending them round to staff (e.g. Sheffield University Library, which circulates a bulletin, covering some 260 journals, to 11 departments, and Manchester Business School, which circulates a xeroxed bulletin covering all contents pages of all journals taken by the School Library). An alternative method, used by the University of Aston, is to circulate a weekly bulletin giving references to items of interest available in the library (covering newspaper and journal articles only - books are covered by accessions lists). The Aston bulletin, though specialised and science-oriented, is a useful source of information on various aspects of higher education. These services, which in many ways are simply an extension of the reference functions traditionally carried out by librarians, represent at the same time a step towards formalised SDI systems; it could be said that universities are following, some years behind, in the footsteps of industrial information services.

5.3 Evaluation of SDI services

A great deal of research has been carried out into the evaluation of information services, in particular on the establishment of valid criteria for evaluation. Wessel[1] has reviewed the literature thoroughly, besides making a very significant contribution himself. Measures of evaluation vary from the very sophisticated (and almost unusable) to the very crude (and almost useless). In particular, it is hard to avoid unreliable subjectivity on the one hand and invalid objectivity on the other. Clearly, much more work remains to be done if measures are to be found which are both reliable and valid and which can actually be used in a working situation.

There tend to be two main approaches to the evaluation of any SDI service: first the approach that looks at the relevance of the service to the satisfaction of users' needs; the second that tries to estimate the effects of the service on the user's information habits and on his 'output' or 'creativity'. This second approach undoubtedly poses the most difficult problems of evaluation. The methods of evaluation suggested by researchers studying SDI sources, such as Connor, Hoshovsky, East,[2] Leggate,[3] Wessell, and others, are the following:

(a) A definition of the kind of service the SDI is designed to provide must precede any attempt at evaluation. The service can aim at giving full coverage of the whole universe of potentially useful documents (Hoshovsky calls this 'peripheral vision') or it can provide limited coverage based on certain agreed journals selected by information officers on an assessment of their relevance ('focused vision').

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[1] Wessel, C.J. Criteria for evaluating the effectiveness of library operations and services: Phase 1, 2, 3. (ATLIS Reports nos. 10, 19, 21) 1967-69. (AD 649 468, AD 676 188, AD 682 758).

[2] East, Harry. 'The development of SDI services.' Aslib Proceedings, 20(11) November 1968, 482-491.

[3] Leggate, P. Procedures for a comparative evaluation of current awareness services. Oxford, Experimental Information Unit, 1969. [unpublished report].

Other SDI systems are purposely limited, to cover, for instance, internally produced literature, or library acquisitions. All these forms of SDI have different aims and need to be evaluated differently.

(b) Evaluation can be based on recall; that is an estimate of the extent to which the services actually disseminate all relevant references.

Other factors to be taken into account in the evaluation of recall are (1) whether articles have already been seen before by the client, and (2) whether the client is himself picking up many relevant articles missed by the SDI. The failures can then be analysed: e.g. whether they are the result of inadequate profiles, inadequate search methods, or inadequate coverage of the SDI system.

(c) Evaluation might also be based on relevance of the references received. In this case problems arise both in the definition of relevance, and the stage at which relevance is assessed. It can for instance be based on the first sight of a title, or abstract, or after the item itself has been read, or even later when the client might have made use of the information in his research or teaching. Moreover different assessments of relevance could be made at each of these stages.

(d) Evaluation of the most useful form of information dissemination can also be made and feedback obtained on the relative usefulness of title only, title and abstract, and even more information about the documents. (Some work has been done on the relative effectiveness of titles and abstracts in science, e.g. by Resnick[1] and Hagerty,[2] but the evidence is conflicting; one would expect titles to be of much less value in social science).

(e) Since estimates of relevance vary according to the stage at which they are made, and the personal approach of the individual scientists, an alternative method of evaluating the usefulness of SDI has been to observe changes in information gathering behaviour and 'productivity' when the service has been in progress for some time. In some respects such an approach is more amenable to measurement, e.g. increased demand for inter-library loans as a result of items cited through the SDI can be measured, and in some cases use of abstracting and indexing journals can be measured and observed, as can general 'browsing'. Clients can be questioned on the use made of references, e.g. whether they have been integrated into the

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[1] Resnick, A. 'Relative effectiveness of document titles and abstracts for determining relevance of documents.' Science, 134, Oct. 6, 1969, 1004-1006.

[2] Hagerty, K. 'Abstracts as a basis for relevant judgement.' MSc Thesis, Chicago Graduate Library School. 1966.

client's own bibliography, cited in research or teaching, etc. To avoid falling into the common post hoc, ergo propter hoc fallacy, estimates need to be made of how many of the references either (a) had been seen before or (b) would probably have been discovered by the client in any case subsequently. Jean Hopkins, in trying to evaluate her service, asked questions of the kind, 'had the service increased the size of the client's bibliography, how was the information used (e.g. for teaching, research, general interest etc.).' Clients were also asked about use of the library subsequent to the SDI. In spite of the subjective element in the responses to questions of this kind, the post hoc approach to evaluation has much to commend it. Estimates of increases in creativity or productivity subsequent to the SDI are perhaps the most difficult to make. Occasionally there may be clear cases where, for example, knowledge of the existence of an unpublished thesis on a subject identical to that chosen by the client is absolutely vital to the direction of his research; but in most cases the influence of the service is likely to be more elusive and difficult to pin down.

(f) The market approach, although it provides no scientific evidence of the usefulness of a particular service, does indicate whether or not the service could be placed on a commercial footing; usefulness is thus measured by demand. Many services that began free, as experiments subsidised by the university, or government, have, once they have become established with a reasonable number of customers, begun to charge for the service; and thus the extent to which clients are prepared to pay is taken as an estimate of the service's value. Some falling off - often a very large one - generally does take place at the time of change over, but the service itself usually survives and then begins to recruit new customers (perhaps even winning back lost clients). The increasing popularity of group SDIs is undoubtedly related to the fact that the cost of such services can be shared by all those in the department. This in itself serves as something of an evaluation of the usefulness of an individual as compared to a group information service.

The PEBUL team made a more sophisticated attempt at cost/benefit analysis by offering hypothetical services in kind equal to the cost of the SDI service, e.g. a research assistant for five days a year, a four-day visit to a big library, or an additional book grant of £15. It was found that clients clearly preferred a continuation of the present CAS.

Although the market approach to evaluation is doubtless necessary in large computer-based systems which are to be self-supporting, it may not necessarily be the right approach to an SDI system operating within a university department. To put information at a premium, or to cut off some members of staff from a potential information source because they cannot afford it, would be inimical both to the purposes and the practice of academic life as we know it in England. This is not to say that departments as a whole might not choose to spend part of their library budget on receiving a current awareness service, and this might perhaps be an answer to the problem. The

alternative approach is to aim at providing information officers as part of the library staff and to operate whatever form of current awareness or SDI system the library can afford.

The Bath CAS hopes to employ all these approaches to evaluation during the course of the year: needs satisfaction, effects on users and, as far as possible, cost/benefit estimates. Since the University Library is also beginning to offer similar services to scientists as part of its ordinary operations, some crude comparisons should also be possible, particularly with those scientists who have been participating in computer-based retrieval services.

5.4 Conclusion

SDI services have grown up in response to scientists' and scientific management's needs to abstract and absorb large quantities of sometimes ephemeral information from diverse sources.

The system has been pioneered by large-scale research organisations financed by government and industry, and science subjects have been found much more amenable to computer processing and dissemination than social science subjects; however, a few SDI services in social science are now under way and their evaluation is bound to have much in common with attempts that have already been made to evaluate scientific SDI services. In the UK, outside of the large-scale commercial systems, an important development in information services is the use of information officers in university libraries to provide SDI and current awareness services both in science and now also social science subjects.

Despite the increasing importance of the computer in science information, there is ample room for the continuation of informal information services run on a small scale - employing SDI methods but still relying much on personal contact and cooperation. Indeed, social science information needs, because of their peculiar difficulties, may well be best satisfied in this way for some years to come.

6. SOCIAL SCIENTISTS' INFORMATION HABITS AND THE EFFECTS OF THE INFORMATION SERVICE

6.1 The aims of the Information Service

It was hoped that, apart from running an experimental information service on the basis of SDI, the I.O. might also be able, through informal contact and observation, to build up a picture of social scientists' information-gathering habits, and the way in which they work. This knowledge would be useful to the INFROSS investigation generally, and would, in any case, be essential to an evaluation of the effects - if any - of the service on clients' information habits. It would also be of interest to discover how far some of the findings relating to scientists' information habits were also relevant to social scientists. The picture that has been built up of scientists, through research, is that they tend to read narrowly, making little use of many major reference tools or abstracting and indexing journals. Many of their information needs are satisfied through personal contacts and conferences, conversation etc.; and in information seeking they tend to follow Zipf's law of least effort.

Scientists also tend not to read foreign languages, and make little use of translations. Indeed, social scientists are even more deficient in this sphere: 98.4 per cent of social scientists' requests from the NLL were in English, as compared to 75.9 per cent of the scientists' and technologists' requests.[1]

Many of the effects of the information service itself could not be discovered simply by the return of formal feedback from reference cards; for instance, do social scientists tend to find the service more acceptable when offered by someone of their own discipline? I.e., would sociologists be more forthcoming with their needs to an I.O. who was a sociologist than economists or education researchers? Was the information service affecting library use of abstracting and indexing tools, etc.? What was the fate of references - were they read and integrated into the client's information system, or were they proving too many to absorb?

After only six months of the service it has not been possible to come to any firm conclusions on any of these questions, but certain patterns seem to have emerged.

6.2 Methods of study

The I.O. has not found it easy to formalise what is essentially an informal approach to observing social scientists at work. Apart from

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[1] Wood, D.N. & Bower, C.A. 'The use of social science periodical literature.' Journal of Documentation, 25(2) June 1969, 108-122.

the initial interview, and a follow-up letter to update interest profiles, no formal contact has been made with staff. The method of observation throughout the year has been essentially that of noting down incidents or remarks that have been considered significant, i.e. either information exchange in the Senior Common Room, or comments made on the service itself, or comments on related subjects, e.g. the library or the inter-library loan system. Comments have simply been jotted down in note form as a 'record of information exchange'. From time to time these notes are reviewed and are attached to the 'dossier' of the individual concerned. (This consists of notes made at the interview, changes in interest profile and additional notes). A number of the remarks noted in this way have been important and some have led to changes being made in individuals' interest profiles. However this does not mean that every conversation of an 'academic' nature has been noted, nor does it imply that all, or even most, of the informal information exchange that goes on has been witnessed by the I.O.; some members of staff very rarely appear in these group conversation situations, and it is probable that most of the serious discussion relating to work takes place within staff rooms. Given its limitations, however, observation and participation on informal occasions is regarded by the I.O. as an essential part of the information service. Indeed, on occasions where I.O.s are attached to library staff, rather than to departmental staff, additional efforts need to be made, either to bring about maximum informal contact, or to seek out staff and offer the information services.

6.3 Information habits of the staff

6.3.1 Organisation of information

About two-thirds of all the social scientists interviewed organised their bibliographies through card index systems; three of these used edge-notched cards (one sociologist, one economist and one educationist). The most common method of filing cards was a subject index; author indexes were rarer. Where members of staff had more than one index, it was usually due to a division of function, rather than to a different system of filing. For example, some staff kept different indexes for different teaching courses, some on specific research projects or books that they were writing.

All staff maintain files of notes, offprints, press cuttings and other information data. A number of Management staff seem to have to cope with more report data than others, and have set up more elaborate filing systems. For example, one member of staff has organised his data in files in a classification used by the Department of Employment & Productivity (he is concerned with labour and employment problems). Press cutting files are used more by those in the field of social and public administration and economics than in sociology proper; of the sociologists, those concerned with deviance, criminology and higher education make most use of press cuttings.

It is difficult to point to many cases where the information service has had a direct effect on clients' organisation of information. One member of staff who had no system of organising his bibliographies was advised to try a simple 5" x 3" card index system to begin with and is in the process of doing so (an economist); another member of staff (teaching criminology) told the I.O. that as a result of all the refer-

ences coming through she had completely reorganised her card index system, an operation which took four days. Two sociologists have commented on the usefulness of the new card system, since the cards fit easily into their own system; two members of staff (sociology and education) have arranged for references to be sent to them on edge-notched cards for easy assimilation. 'Overloading' with references is difficult to evaluate, since no member of staff is expected to read all the references sent to him at once. One member of staff (the Professor of Sociology) returned almost no feedback until December, when he went through everything at once; this does not, however, indicate that he was 'overloaded', since a number of academics prefer to work in this way. For instance, Jean Floud refers to the librarian's role of 'supplying one with dockets and comments and abstracts which one can file away until one has time to refer to them during the vacation.'[1] The I.O. observed that many of the social scientists had to leave serious reading and work on research projects until the vacation, since the term was fully occupied with teaching, service teaching and contact with students. Some staff have a heavier teaching and administrative load than others, and these find it difficult to fit in any research. Index cards citing articles are thus generally either carried around in handbags, or put on one side until the item can be read; after which an abstract or comment is added to the card, and it is filed away.

Some members of staff prefer to work with longer notes of articles and subject-organised lists of references rather than cards, whilst others seem able to absorb and recall information without the help of an aide memoire in the form of cards. Instead, information is either integrated into lecture notes or kept in its original form, of offprints and books. It is possible that social scientists teaching disciplines with a more rigid volume of theory might find less need to have at their fingertips considerable quantities of up to date reports, surveys, etc. and this might explain the fact that an economics lecturer seems to have less of a need for card indexes etc. than sociology lecturers. But it is just as likely that these are the result of personality and type of intelligence as of subject discipline.

6.3.2 Use of information sources

(i) The use of the library as a source of information seems to depend on a number of physical factors that have nothing to do with the information service. First, Bath University Library is - compared with other university libraries - inadequate in many respects; book allocations are not sufficient; back numbers of journals (especially in the social sciences) are seriously deficient, and the number of primary journals taken also leaves some gaps. Bath compensates to some extent for the lack of primary journals by excellent holdings of abstracting and indexing journals, but most social scientists are unfamiliar with the use of these tools (see below). Secondly, the physical separation of the social science branch library from the

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[1] Floud, Mrs. Jean. 'Problems of social science information methods from the user's point of view', in Library Association. Information methods of research workers in the social sciences. London, Library Association, R.S.I. Section, 1961. p.16-19.

social science teaching area seems to be a major disincentive to its use, especially since there is little seating space in the library, and the social sciences share a branch library with Biology and Modern Languages. The Education and Management branch libraries do not labour under this disadvantage, since they are in the same buildings as their respective departments, and they are almost exclusively devoted to their special subject. The I.O. has not been in a position to observe the use made of the library by the Education and Management departments, but suspects that it is greater than that of the social scientists sited at Claverton. The impression gained about the use of the social science library is that regular visits (e.g. twice a week) are rare, and that staff tend to go only to make an onslaught on a whole set of references for a new course, or to pick up an inter-library loan or a new book ordered. The financial limitation on ordering books, the time lag in their arrival, and the competition with students for their use subsequently, all seem to have contributed to a situation where several members of staff rely increasingly on the University bookshop to supply their need to keep up with the latest publications.

Two other factors have affected library use during the year: first the completion of the Senior Common Room, which meant that staff no longer had to walk over to the refectory in the South Building (where the branch library is located) for lunch. Some of them were in the habit of popping into the library after lunch and before the afternoon's lectures; this now no longer happens, and visits have to be in the morning, which for a lecturer who has a nine o'clock lecture is impossible, as the library is not open before that time; or in the evening, when staff are often anxious to get home. Secondly, the opening of a new road has meant that the more senior members of staff park their cars below the social science department and do not even need to pass the library at any time. The I.O. often acts as a go-between for members of staff who want photocopies, books and inter-library loans brought up to them, since she is the only member of the department visiting the library every day. Although many, if not most, campuses have a separate library building, and the Bath social scientists are not differently placed from other academics in having to go some distance for their books, the perceived inconvenience seems to reinforce the law of least effort. The I.O. will be in a good position to see what changes take place after the new library is built, when we might reasonably expect at least a 'honeymoon period' with the new building, and at best a complete alteration in users' habits.

Present complaints about the library seem to centre around the lack of funds for books, the arrangement of journals and the problems relating to the provision of books in Management courses for economists (many of the books are at Rockwell). None of these problems - except perhaps the first - is insuperable.

(ii) Use of primary journals and sources

Reading habits, as mentioned by clients in the initial interview, tended to differ between the Schools. Of the staff in the sociology group (10), only one (a psychologist) did not mention the British sociological journals. All staff teaching sociology read

three or more purely sociological journals. In addition, all mentioned journals within their own specialist field, in which everyone seemed to read an average of two or three journals; the particular fields mentioned were as follows:

social administration and policy
social security
social casework and child care
criminology
psychiatry } (interests here were in mental health and deviance)
psychology }
urban studies; town planning
technical and scientific education
Asian & Pacific affairs
economic development
educational research
computers

The subjects listed all figure in either teaching or research interests, or, in addition, are related to voluntary work outside of the University (e.g. Magistrates' Courts, marriage guidance, etc.). Sociologists, more than other social scientists, seem to need to read more widely around their subject simply to keep up and remain in touch for teaching purposes. This is true to a lesser extent in economics, although the comparison is really not possible since the economics teaching group is so small (4). Specialist journals mentioned, in addition to the basic economics journals, concerned

economic development
taxation
economic history
econometrics

- all of which also correspond to special teaching and research interests.

In the School of Education, the reading of journals seems to fall into three distinct categories: firstly, journals concerned with the teaching of subjects in which each staff member specialises, e.g. Chemistry, Physics, Biology, Mathematics, Social Sciences, etc.; secondly journals which have a more general interest, e.g. Times Educational Supplement, Trends in Education, and Sociology of Education; and thirdly, journals which are concerned with subjects of research and special interest to members of the School, e.g. the programmed learning, curriculum studies and comparative education journals. Because of the nearness of the Education branch library, access to journals presents less of a problem.

Management staff seem to use more reports, statistics, and information from various institutes and direct sources than the other three groups. Reading is again of a general nature (management journals and management and business news) and a specific nature, e.g. personnel, marketing, accountancy, industrial relations, wages, etc., which all have their appropriate journals. Only three members of staff mentioned journals outside these broad management fields: two of these, lecturing on the more sociological

and psychological aspects of management, read journals in these fields (British Journal of Sociology, Human Relations, Occupational Psychology, etc.), while one lecturing in industrial relations reads New Society.

(iii) Use of secondary journals (Abstracts etc.)

As mentioned previously, the I.O. did not make any direct reference to abstracting journals during the interview, believing that an unsolicited reference to any secondary journal would be a better indication of its use than an answer in response to prodding on the subject. In the event, very few clients mentioned abstracts or indexes at all, and some of the references were not commendatory. Only one member of staff in the Education department mentioned the use of an abstracting journal; though one or two used Sociology of Education, it is unlikely that they were not aware of the existence of Sociology of Education Abstracts, but the journal was not, nevertheless, referred to.

In Management, only two members of staff mentioned abstracts: one used Personnel Management Abstracts; another commented that he had tried to use Psychological Abstracts but found it 'too difficult to use for the net result'.

Of the Economists, only one reference was made to an abstracting journal - Journal of Economic Abstracts - and in this case the person pointed out that the lack of an index made it almost impossible to use.

In the Sociology group, only one person - a research assistant - made any reference to the use of an abstracting and indexing journal (Sociological Abstracts). Two or three members of staff do however use the index of New Society as a retrieval system for information in the social policy and administration fields.

During the course of the year, the I.O. has pointed out the whereabouts of Sociological Abstracts to two members of staff chasing up references given to them where this abstracting journal was cited. One economist (who shares a room with the I.O.) asked, during the course of conversation, what an abstracting journal was; on being given some examples he subsequently made considerable use of one of the economics abstracting journals in the library, and made a habit thereafter of browsing through them.

(iv) Other sources of information

The main sources of information on books seem to be material sent direct from the publishers. Attitudes to this source vary widely; one or two members of staff said that they threw publishers' lists straight into the wastepaper basket, but the great majority do find them very useful, and feedback indicates that most book references that had already been seen were seen through publishers' lists. After publishers' information, the main source of knowledge is book reviews in the weeklies and newspapers, citations in journals and other books, and informal information exchange.

Other sources of information most often cited are material sent by various institutes and professional and research organisations to which people belong; e.g. British Sociological Association, British Institute of Management, Institute of Personnel Management, National Foundation for Educational Research, etc.

Informal information exchange is of course important, and takes place both within and outside the University through conferences and personal contacts. Two members of staff mentioned useful contacts they had made at conferences, and the I.O. was delighted to find that a speaker she had arranged for a conference organised by the School of Humanities & Social Sciences had research interests in common with members of the economics group (in this case further contact was arranged). Four members of staff attended a meeting of the regional group of the British Sociological Association and both they and the I.O. found the informal conversation arising out of such meetings as useful as the formal papers given. One member of staff regularly attends seminars at Bristol University Department of Sociology (the I.O. found this out only through casual conversation).

The degree of informal contact through personal contacts is of course related to age and status; the older members of staff who have taught in a number of universities, or are the chairmen of many committees, or frequently lunch with publishers, tend to rely on the informal network of information far more than those who are at research assistant or assistant lecturer level, although everybody has had experience of and contacts with at least one other university. Where staff have worked outside the academic world they are often able to maintain useful informal contacts with their previous employers, e.g. the criminology lecturer who was previously a Research Officer at the Home Office Research Department. Indeed, the placement of students (twice during their four years) depends very largely on the informal contacts with research organisations, government departments, local authorities, and social service departments that certain members of staff have built up. The feedback from students on placement about the work that is going on is also interesting and sometimes useful. In some subjects - especially social policy and social work - it is probably true to say that staff draw as much on their informal knowledge of the 'system' as they do on their academic knowledge of the theory, when giving lectures.

Informal communication within the University takes place daily during coffee etc., and through seminars and similar meetings. The I.O. makes a point of attending seminars given by members of the Sociology group where this is possible; and these, though they have been infrequent, are a useful means of communication with staff and the work they are doing. It is notable that research is little discussed over coffee, as compared with teaching and student problems. This perhaps is also a reflection of how time is spent: with the exception of research assistants, most staff seem to be very greatly occupied with teaching, service teaching, administration and students' problems.

References are occasionally made to books and articles, generally when someone has just bought a new book and turns up in the Senior Common Room with it, when a book has been published by someone personally known to the staff, or if a member of staff has reviewed a book or written an article in a well-known journal. Discussion of books therefore tends to enter into the conversation in a casual way, rather than being part of an academic discussion. Books are seldom 'recommended' by members of staff other than the Professor, nor are the most discussed books necessarily read. The mass media - newspapers and television - are certainly more discussed than any other information media. A few members of staff attend meetings of the Bath University Sociology Society or the Malthus Society (Bath University's Economics Society) and the I.O. has tried to attend some of these gatherings; these are important, as the guest speaker may well spark off new interests and cite references which staff had not come across before, or (as in a recent case) incidentally talk on a subject of interest to a member of staff who has not attended. (The I.O. can then pass on the references or comments made at the meeting). A series of informal staff/student seminars have also been held on topics which could not be discussed in such detail in the formal curriculum. The I.O. has not been able to attend these, but accounts of them suggest that they do open up new areas of interest in which members of staff may not have time to specialise themselves.

Although informal information exchange is extraordinarily difficult to measure in its effects, the I.O. believes it to be of tremendous importance, especially with regard to teaching experience. Informal discussions about how lectures and seminars are going, and how students react to difficult concepts and formulae presented in the classroom (e.g., economic equations etc.) are the only ways staff can know about each others' teaching practices (apart from feedback from students themselves); this reassurance and exchange of experience is probably vital to the teaching role.

6.4 Effect of the information service on clients

Apart from the direct usefulness of the service itself - provision of references, bibliographies etc. - it would be unrealistic to suppose that the effect of the I.O. on users' personal information habits has been much more than marginal. Moreover, because of the unevenness (for various reasons discussed earlier) of the services provided, some members of staff have got little or nothing out of the services offered; where this has been the fault of the service itself, the I.O. is taking steps to try and remedy the situation, but in some cases it is difficult to visualise the service ever being a tremendous help. By contrast, other members of staff always follow up references and integrate them into their card index systems and have undoubtedly expanded their bibliographies as a result of the service. A further follow-up of what happens to references will need to be undertaken during 1970.

Except in one or two cases, members of staff had already adequately developed their own information systems before the I.O. came on to the schene, but in two cases the I.O. has offered some advice or assistance in building up an information system (these were both economists neither of whom had a card index system).

Two or three members of staff - as mentioned earlier - have made use of abstracting journals, but there has certainly been no wholesale conversion to this source; staff are much more likely to ask the I.O. if she can find anything on X for a lecture etc. than to do small-scale literature searches themselves. One person, in discussing his own organisation - or lack of it - has admitted that a properly arranged card index would be of use, and enable him to write more than a few paragraphs at a time before having to stop and do a literature search - but the I.O. does not, in general, expect any radical change in individual habits.

However, the information service is definitely producing two results; firstly the use of journals outside of the client's field as a result of references; it is not possible to say that after following up a reference the use of an unfamiliar journal becomes a habit, but one member of staff at any rate has expressed surprise at the relevance of a particular journal outside his discipline; secondly the increased demand for inter-library loans amongst those (ten in all) who are included in the circulation of current awareness bulletins. The I.O. plans to try and evaluate the usefulness of articles obtained in this way.

Another promising result of the information service is that staff now come regularly to the I.O. in connection with research projects or new teaching courses, with requests for literature searches, or simply to 'keep an eye open for anything on X'. Recent requests of this kind have been made when the client was part way through a piece of research and wanted to ensure that he had not overlooked any significant research, and when a client has been either preparing for an outside lecture, for example, to the British Sociological Association, or had been considering the possibility of setting up a new course and wanted some idea of the literature available. Thus staff are using the I.O. not simply to provide a current awareness service, but also as a research aid. Perhaps it is significant that all of these requests have come from staff in the School of Humanities & Social Sciences: physical proximity is obviously a key factor in the provision of this kind of service.

The question - posed at the beginning of this chapter - as to whether sociologists (who share the I.O.'s discipline) would be more forthcoming and find the service more acceptable than other staff, has not been satisfactorily answered in the first year. Certainly staff with interests in sociological subjects have tended to receive more from the reference card service, but economists benefit from the circulation of the Board of Trade's bulletin and would not expect to receive so many personal references.

The past year's experience has convinced the I.O. that personality and physical accessibility, rather than subject discipline, determine how far the information officer is used; from the beginning contact with staff in the Schools of Education and Management has been more difficult and no literature searches have been solicited from these clients. Where information officers work from the library, rather than from a particular department, every opportunity to meet staff on informal occasions, over coffee, etc. should be taken. Finally, although the importance of subject discipline should not be overestimated, the I.O. suspects that her job would have been much more difficult had she not been a social scientist herself, since all staff, in describing their subject

interests, have assumed a certain degree of familiarity with their own jargon; and indeed the sociologist's jargon is perhaps more exclusive than that of other social scientists. Whether they would have taken the trouble to translate their private language for the benefit of a non-social scientist I.O. can only be surmised: complete ignorance of the jargon would obviously constitute a serious barrier to initial use of an information service. Unfortunately, few attempts have been made to compare the quality and extent of use of services offered by specialists and non-specialists, though this is obviously of crucial importance to the development of information services. In this case, the I.O. is in no doubt as to the value of her social science training, but has no means of assessing any shortcomings in her service which may be due to a lack of training in information work.

7. FUTURE WORK

7.1 Services offered

The SDI reference card service will be continued during 1970, together with the circulation of the present two bulletins as already described. It is possible that other bulletins may be circulated or that more direct services in connection with the reference cards may be provided, for example, inter-library loans and photocopies on request. (This is already done in some cases, but has not been formalised). The provision of press cuttings will be continued and a private file of press cuttings (filed and organised by the I.O.) is being arranged for one of the economists. The circulation of sections of Sociological Abstracts to certain members of staff is also being tried, together with the circulation of The University of Aston's current awareness bulletin Higher Education to selected members of staff.

In addition, it is hoped to include a new service: a computer-produced KWIC (or KWOC) index to personal files of references. As already mentioned, all individuals have their own reference files, mostly on cards, so the advantage of a computer-produced list, if any, will be marginal. However, each individual could have his references indexed by author, title, keywords in the title, journal, and date; some of these indexes at any rate could prove useful. Moreover, printed lists have some advantage over cards, in that quick scanning is possible. The main interest of this experiment will however lie in the comparison with manual indexes that will be possible.

Keyword indexing has serious limitations in the sciences, but one would expect these to be far more serious in the social sciences, because of the relatively imprecise terminology and the non-indicative nature of the titles of many articles. The advantages of computer-indexing from titles are of course its speed and flexibility; if a key-word index in the social sciences (or one social science) proved even partially adequate, indexes could be produced with the speed of CBAC or Chemical Titles, even though they had to be superseded later by full manual indexing. It is difficult to test the adequacy of computer-indexing without a large data base, a large body of users, and sophisticated means of evaluation. However, computer-produced indexes of individuals' files would go some way to answering the question; a large data base is not needed, since the references are already known to be relevant, and a ready comparison can be made with their own (presumably usable) indexes.

7.2 Evaluation of the information service

The evaluation of the information service during the year will take two forms. First a continuous evaluation, through the observation of the staff and their information habits, and the noting of any remarks they may make about the service and about their information problems generally. In the late autumn the new library will be opened and this,

it is hoped, will be a useful opportunity for the I.O. to observe any differences of habits occasioned by the provision of a more accessible and better organised library service.

Secondly, there will be a more formal approach, probably conducted through a questionnaire and interview technique, to discover the usefulness of various aspects of the service; and to follow up the useful references, after feedback. (It would be of interest to know of discrepancies between judgments based on titles of articles and books, and judgments based on the full article or book).

Finally some kind of cost/benefit approach to the service (such as that employed by Jean Hopkins in PEBUL) might be attempted; and thought will need to be given to the kinds of service that might be offered by an I.O. working from the library who is not necessarily a social scientist.

7.3 Evaluation of social science information sources

Since the I.O. regularly scans both secondary and primary journals and keeps records of the sources of all references, she may well be able to evaluate the usefulness of the social science abstracting and indexing journals available at Bath University. The kind of evaluation that would be of interest might indicate which sources have been of use in different ways or for different subjects; also which are difficult or easy to use, and why. Some kind of evaluation might also be made about the coverage of particular journals as well as their ease of use, and possibly of the extent to which abstracts (where given) are a good guide to the content of the actual article or book.

7.4 Use of BNB/MARC tapes from Trinity College, Dublin

During 1970, Trinity College Library, Dublin is to provide a computer-based bibliographic information system using the machine-readable British National Bibliography BNB/MARC tapes. In order to evaluate the usefulness of this service to social scientists in various fields, a link with TCD's service has been arranged, through the kind offices of the Librarian of Trinity College, Dr Denis Roberts, and the I.O. has provided interest profiles for six clients in the Sociology Group. These profiles were expressed in terms of the Dewey Decimal Classification, but the net was spread broadly in order to ensure a reasonable output. The interest profiles covered the following subjects:

social welfare
social policy and administration
social change
experimental and social psychology
social groups and institutions
sociology of work and industry.

The I.O. will continue to scan the weekly BNB, and will therefore be able to compare the MARC output and manual scanning as alternative methods of retrieval. Records can be kept of (1) the number of non-relevant references received; (2) the time lag between first notice of items (book reviews, publishers' notices etc.) and their appearance, first in BNB, and finally in the MARC tapes; (3) the number of useful/

essential references retrieved through the MARC tapes which had not been seen before.

7.5 Evaluation of the effects of the new library

This report has continually emphasised the importance of propinquity and access to the provision of information service; and the effects of the completion of the new Senior Common Room building on the use of the social science library have been described. In the autumn of 1970 it is hoped that the new library will be opened, and the I.O. is anxious to see if the convenience of the new library and the difference in layout will lead to new habits of use. It is hoped that the confusion that now seems to exist as to the location of abstracting journals and other bibliographical tools will be clarified as a result of the curiosity that new buildings arouse. If problems do develop with regard to the use of the new library the I.O. will be in a good position to discover them and pass on the criticism. Closer cooperation with the ordinary library staff will be possible, as well as comparison with the information services about to develop in other subjects. Not least the I.O. will be interested to discover what effect, if any, the new library has on her own information habits!

Appendix A

Forms etc. used in connection with the information service

Mark I: Form sent to client with (numbered) reference (intended to be returned to Information Officer when the form was filled up)

"Feedback" on information given

NAME:

No. of ref.	Had you already come across this reference?	If not, do you think you would have been likely to come across it yourself?	Do you think it is: An essential reference?	Useful (worth following up) but probably not essential?	Probably relevant but not worth pursuing?	Probably not relevant?

A2

Mark I: Record of references sent to client
(retained by Information Officer)

Record of Information Sent & Feed-back

Name:

Date	In Lib.	No.	Form of Info.	Source	Type	Already seen?	Likely to see?	Essen-tial	Useful	Marg-inal	N.R.

Mark II: Reference form with feedback counterfoil
(sent to client)

	Where reference found:
This reference is/is not in the library	Date:
Comments:	Type of material:
	L 0003

Mark II: Lower half of reference form
(retained by Information Officer)

	Have you seen a reference to this before? YES/NO
	If so, where?
This reference is/is not in the library	
Comments:	
	Do you consider this reference: ESSENTIAL? USEFUL? MARGINAL?
Please complete counterfoil as soon as you receive this and return to Mrs Dawn Cunningham, 1W.4.19, Claverton Down.	L0003

A4 Letter sent to selected social science staff at Bristol University

Bath University of Technology

Library

Maurice B. Line, *University Librarian*

Northgate House
Upper Borough Walls
Bath, BA1 5AL
Telephone Bath 4276

June 1969

Dear

I am writing to offer you, on an experimental basis, a free current awareness service, covering books, journals and reports in your field of interest. This is related to a research Investigation into information requirements of the social sciences, and is supported by a grant from the Office for Scientific and Technical Information. Briefly, the aim of this particular project, which is being carried out under my direction by Mrs Dawn Cunningham, is twofold: to ascertain more about the sorts of information social scientists want and use, and to assess the value of a personalized information service to social scientists in an academic environment.

The experimental service will operate for twelve months, from August 1969 to July 1970; during this period, you can receive cards notifying you of items believed to be of relevance to you. (The cards will be similar to the one which is being used for the social scientists at Bath University; a copy of this appears at the end of this letter). These will be sent to you in weekly or fortnightly batches (depending partly on bulk). Participants will be asked to complete a counterfoil for each reference and return it to Mrs Cunningham. Later, they may be asked for their general assessment of the service.

Scanning is based mainly on a very large number of journals, including those in your own university library. The service is of course in no way intended as an alternative to the services offered by your own library. I have discussed the matter fully with Mr Higham and Miss Shipway.

If you are prepared to participate in this service, you are asked to specify on the enclosed form, in your own words, your current areas of interest. You may find that the first batches of cards you receive do not match your interests ideally, but they should gradually become more and more relevant as your counterfoils are checked.

This letter is being sent to various members of staff in your department; if you think that it would be useful for you to discuss this as a group with Mrs Cunningham and myself, we should be pleased to come and talk with you at Bristol. In any case, we would like to discuss the service with you personally when it has been in operation for two or three months.

I very much hope you will agree to take part in this experiment. I am sure you would find it useful, to judge from our experience with social scientists here, and it would certainly be of value to us.

Yours sincerely,

University Librarian

Bath University of Technology
Experimental Current Awareness Service to Bristol University

Name:

Department:

Central area(s) of current interest
Please be as specific as you can, and indicate for each area whether it is related to your research (R), teaching (T), or both (RT):

Marginal areas of interest
Please be specific, and indicate for each whether it is related to your research (R), teaching (T), or both (RT):

What languages do you read?

Please send this form to:

Mrs Dawn Cunningham,
School of Humanities and Social Sciences,
Bath University of Technology,
Claverton Down,
Bath,
BA2 7AY.

Appendix B

Table 9

Relevance by physical form of information and subject

Physical form	Total N	Total %	Relevance: Essential N	Essential %	Useful N	Useful %	Marginal N	Marginal %
ECONOMICS								
Total	60	100	8	13	30	50	22	37
Books	18	100	3	17	10	55	5	28
Journal articles	38	100	4	11	18	47	16	42
'Reports'	4	100	1	25	2	50	1	25
EDUCATION								
Total	74	100	17	23	51	69	6	8
Books	6	100	2	33	4	67	-	-
Journal articles	62	100	15	24	41	66	6	10
'Reports'	6	100	-	-	6	100	-	-
MANAGEMENT								
Total	112[1]	100	30	27	50	44	22	20
Books	18	100	4	22	11	61	3	17
Journal articles	74[2]	100	22	30	31	42	13	17
'Reports'	20[3]	100	4	20	8	40	6	30
SOCIOLOGY								
Total	196	100	60	31	88	45	48	24
Books	36	100	9	25	15	42	12	33
Journal articles	150	100	51	34	68	45	31	21
'Reports'	10	100	-	-	5	50	5	50

[1] 10 (7%) in this category did not answer

[2] 8 (11%) in this category did not answer

[3] 2 (10%) in this category did not answer